

# **Benzothiazole based probes for Chemosensing, Bioimaging and White Light Emission**

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Luminescent materials are powerful tools for analytical sensing and optical imaging where these are generally used in gaseous, liquid and solid states. Their sensitivity and application potentials are subject to the brightness and contrast of their emission characteristics before and after their application. For majority of their practical applications, the fluorescent chromophores are used either as films or aggregates. If the aggregation is associated with emission quenching caused by the intramolecular rotations, exclusively, it limits the scope of their practical application, especially in bioimaging and optoelectronics. This is in contrast to the systems, which behave exactly in the opposite manner i.e light up themselves upon aggregation (AIE property) guided by restriction of intramolecular rotation. Such systems have found an ample use as turn-on sensors for various material science related applications. We envisaged that integration of AIE property with ESIPT (Excited state intramolecular proton transfer) should in principle improve the photo-physical effects needed for high tech applications. Working in this line, we have developed a variety of fluorescent molecular probes and have explored their sensing and bioimaging etc. potential. In this talk, optical properties and applications of benzothiazole based systems shall be presented, especially in the areas entitled above.

## Selected References:

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## Bio-Sketch of the Speaker

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Professor Paramjit Kaur received her Ph.D. degree from Guru Nanak Dev University in 1990. She did a post-doctorate at the Departamento de Quimica Inorganica at Universidad Complutense de Madrid before joining as a lecturer in the Department of Chemistry at Guru Nanak Dev University in 1997, where she is now a full Professor. Her research interest focuses on Chemosensing and Material chemistry.

### **Selected Publications:**

- P. Kaur et al. J. Mater. Chem. C 2019, 7, 11361
- P. Kaur et al. Sens. Actuators B:Chemical 2019, 281,613.
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